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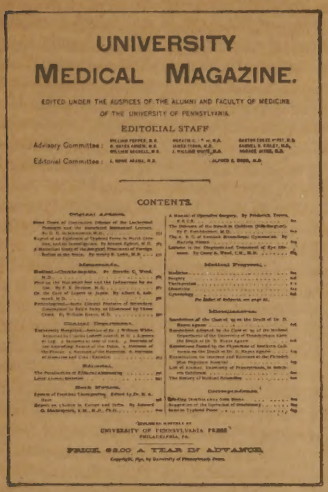

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AUTO-INTOXICATION.

BY SAMUEL WOLFE, A.M., M.D.,

PHILADELPHIA,

Physician to the Philadelphia Hospital; Neurologist to the Samaritan Hospital.

AUTO-INTOXICATION.

By Samuel Wolfe, A.M., M.D.,

Philadelphia,

Physician to the Philadelphia Hospital; Neurologist to the Samaritan Hospital.

The key to modern pathology is intoxication. A symptom-complex being given, to find the alteration in structure and the cause of that change in a definite chemical substance would be ideal.

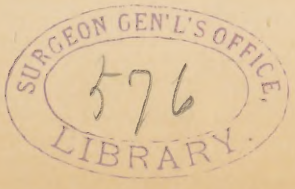
In the present state of science, while much in this direction has been accomplished, there remains still a large field to explore, and a great mass of evidence to study and weigh.

Whether the *materses morbi* is a poison formed in the laboratory of the chemist, the resultant of the organic life of a vegetable parasite, or the product of physiological changes within the organism and destined for excretion, the class of facts which present themselves ultimately to the pathologist bear a close relation to each other.

To the therapeutist, too, there must occur the same thoughts in all instances, of primarily an antidote, then an eliminant, and, finally, means to reconstruct and repair organic damage.

A product of physiological activity, which is intended for excretion but is not eliminated, might be equally considered as an auto-intoxicant, with one which is excreted and then reabsorbed. But the ordinary usage of the term auto-infection seems intended to cover only the latter class. To be still more exact, we must remember that these excretory products come in contact with foreign matters on the surfaces of the excreting organs, reacting with which special deleterious compounds may be formed, and then absorbed.

Thus the cutaneous tract affords lodgement for impurities of all sorts, and is constantly exposed to the atmospheric air. The respira-



tory tract is only in a lesser degree affected in the same way. The urine in contact with the epithelial detritus from the bladder undergoes ammoniacal decomposition, when retained, and the genital tract of the female is very often a hot-bed for putrefaction.

But probably more than all, the alimentary canal affords the best source of auto-infection. With the constant introduction of ill-selected food and drink, and the innumerable deleterious articles that civilized man contrives to offend it with, there is no mystery surrounding this fact. But even with this abuse, the chances for escape might be comparatively good if peristalsis were to continue sufficiently active. An indigestible or over-heavy meal in the normal individual will cause either vomiting or a prompt crapulous diarrhea. But many repetitions of such indiscretions soon result in a tolerance of these irritants, and in the slow weakening of the muscular coats of the stomach and intestines, with the chronic indigestion and constipation with which we are all so familiar.

With these conditions established, the constant absorption of intoxicating and infectious matters from the intestinal tract is not only possible, but highly probable.

Of the exact nature of the toxins which are thus formed and find an entrance to the circulation, the knowledge is at the present time very incomplete. Studies in this direction are being made by many able pathologists, but the difficulties are great, and the progress consequently slow.

The appearance of indican in the urine in increased quantity is held to indicate auto-toxicosis. Connected with this is a disturbance of the ratio of the normal sulphates of the urine. Preformed sulphuric acid is found absent while the combined and ethereal sulphates are increased.

Clinically the intoxication causes a train of symptoms, for the greater part referable to functional disturbances of the nervous system. It is reasonable to assume that the inherent condition of the nervous system, the constitution or temperament of the individual, may co-operate in the *rôle* of an etiological factor. Thus, while some individuals may suffer severely, others may, under the same degree of intoxication, be but slightly affected. This observation may, however, be applied to all forms of nerve-poisons.

Wherever such cerebral symptoms as somnolence, lethargy, stupor, or coma may appear, this source of their production should be considered. In typhus fever, lead-poisoning, peritonitis, and obstruction of the bowels these symptoms are apt to be prominent, and in all of these diseases it has been experimentally found that the quantity of indican in the urine is increased. This same increase of indi-

can has also been observed in trichinosis, catarrh of the stomach, hemorrhage into the stomach, cholera, carcinoma of liver and stomach, and in diseases of the small intestine generally. In this whole class, nervous symptoms indicating disturbance of the higher centres are generally prominent at some time in the course of the disease.

A case of typhoid fever, which at this writing is not yet convalescent, has had jactitation, carphologia, and active delirium, all in an extreme degree. These symptoms seemed to bear a curious relation to the temperature, being always most pronounced when the temperature was least inclined to rise. Thus, at a temperature of 101° to 102° F. there was great restlessness and agitation for days together, in spite of the administration of sedatives, while when the temperature stood for a few days at 103° F. and above, the patient was comparatively quiet. These vacillations in the temperature occurring at least three times thus far in the course of the disease, with always the same relation to the nervous symptoms, the significance of their connection is very forcibly established. Recognizing the possibility of their being due to auto-intoxication, I administered cathartics in several instances, and each time with decidedly beneficial effects.

The symptoms of neurasthenia, if not actually produced by auto-infection, as I believe they are in some instances, are without doubt maintained and fostered by it to a very considerable degree.

Recent researches have shown that this etiological factor enters very extensively into insanity. While I cannot draw on my own experience here, the following case, which very closely simulated general paralysis of the insane, illustrates the extreme degree of nervous break-down which can result from this cause.

B., aged 40, Englishman by birth, a carpenter by occupation, was admitted to the Samaritan Hospital on October 23. Two weeks before admission he had been seized with violent general convulsions, which recurred frequently during a period of twenty-four hours. They were epileptiform in character. Previous to the seizure he had been able to follow his usual occupation, but had for some time complained of weariness, especially in his lower extremities, and had been somewhat dejected in spirits. The day following the convulsive attack, he seemed to be as well as prior to it, but a day later he became delirious and unable to walk, or even to stand.

At the time of admission his mental state was bad. He was confused and wandering in all his ideas, and could not find words to express himself without being prompted. The condition was not a true aphasia, and it was afterwards learned that he had all his life had a halting speech. The speech may be said to have been ataxic. He could, on account of the mental condition, give no satisfactory

account of himself, but managed to convey to the attendants some facts about his former life. His face was much suffused, and his look apathetic. The pupils were somewhat contracted and irregular in outline. Ophthalmoscopic examination revealed a bilateral slight papillitis. There was incontinence of urine and feces.

An examination of the upper and lower extremities revealed some weakness of the muscles, but no wasting and no sensory disturbances, so far as could be ascertained, in his present mental state. The knee-jerks were absent, and the superficial reflexes also. There was extreme inco-ordination of both lower and both upper extremities, and it was owing to this fact that he was unable to stand. The tongue was heavily coated and dry. The temperature and pulse were normal, and remained so throughout the whole period of the disease, except on one day, when it suddenly went up to 103° F., and remained there for a few hours. He was given full doses of quinine, for a few days, as soon as this was observed, and no subsequent rise occurred.

He remained in the condition above described for about three weeks, with some improvement in his mental condition towards the end of that time, as well as in the inco-ordination. During the next two weeks he improved rapidly, so that at the end of that time he could walk perfectly well, could touch any part of the body as directed with his finger-tip, had no incontinence, no mental obscuration, or difficulty of speech, beyond what was natural with him.

He had been treated with daily doses of salines, thirty grains daily of potassium iodide, and small doses of ergot for about two weeks. He was then put on silver nitrate, one-quarter of a grain, three times a day.

There was no history of syphilis attainable, and the symptoms in the case hardly point that way. There was no marked tremor of lips and tongue, such as is a very constant symptom of general paralysis, but otherwise the case very closely resembled a paresis of the ascending variety, and of very rapid onset and progression. I regard it as due to auto-intoxication, as neither syphilis nor paresis would have cleared up under the treatment.

It is highly probable that migraine, hysteria, and even epilepsy are frequently associated with this cause.

In these and many of the other neuroses the course of the symptoms would indicate an accumulation of something that gives rise to a "nerve-storm," a seizure, or a discharge, by whatever name it may be called. The indications also point to an elimination or conversion into comparatively harmless products of the offending material during the attack. In this way we have a periodicity established,

which belongs more or less to all these troubles, and which occurs independent of medicinal influences.

A few days ago, a young Hebrew came into my office, stating that for two years he had suffered from a curious round of changes in his feelings and disposition. For a period of two to three weeks he would feel perfectly well, happy, and energetic, then with the suddenness of a cloud floating over the sun he would become melancholy, dejected, and irritable. His head would ache almost constantly, his muscles would tire very easily, and a heavy and oppressive feeling was present in the hypochondria. He cannot sleep at night, and his feet and hands are cold. At the end of two or three weeks this state would pass, almost as suddenly as it came on, into his previous good health, only to be followed after the same interval by another period of gloom and incapacity. His bowels were very sluggish, and his tongue somewhat furred.

A transition of types like this into migraine or epilepsy is quite often observed. I have seen attacks of migraine displace epilepsy and the reverse, where the disease in either instance was typical in all its features.

That purgation is an essential part of the treatment in these cases is evident. The salines of the less drastic type are the best. A heaping teaspoonful of Rochelle salts, or a wine-glass of natural purgative water, three times a week, taken on rising in the morning, are available. In some special cases a blue pill or a few grains of calomel with sodium bicarbonate can occasionally precede the saline in the evening.

The mineral acids are useful either alone or in connection with small doses of sodium salicylate, phenacetin, acetanilide, or antipyrin.

Of course, the diet, the habits, and the occupation of the patient should be properly regulated.

FOOD AND STIMULUS.

By Samuel Wolfe, M. D.
Physician to Philadelphia Hospital; Neurologist to Samaritan Hospital.

IT WAS late on Sunday night; I was sitting in my office alone. I became aware of a stillness, unusual for even that quiet hour. I turned to the old grandfather's clock in the corner of the room, an heirloom and highly prized, by the way. On opening the panel door in the case, I found the pendulum still swaying regularly from side to side, but not with its full range. The second hand on the face rocked to and fro with perfect regularity, but did not advance over its usual circular course. The great weights had sunken as far as the fully unwound cord would admit. I had neglected to wind the clock the night before, the accustomed time for performing that weekly duty, and the faithful old servant had exhausted—almost exhausted—the last vestige of force stored there more than a week before. The food material had been all used up. I thought, will the winding restore the swing of the pendulum to its full degree? Will it bring back the tick and movement of the works and hands? I tried it and waited. The pendulum and second hand continued their weak, purposeless movements, but they gained no power. They became even fainter. There was the force, ready to act, in the suspended weights—enough of it to run the machinery for eight days. The weak, dying patient had been fed to repletion, but nothing had been gained. I gave the pendulum a slight push; the familiar tick was heard, the oscillating hand advanced; the clock was off for a week's run. I had given a stimulus.

1701 Diamond Street, Philadelphia.